

Weather Information Network



NASA Aviation Safety Program June 5, 2001

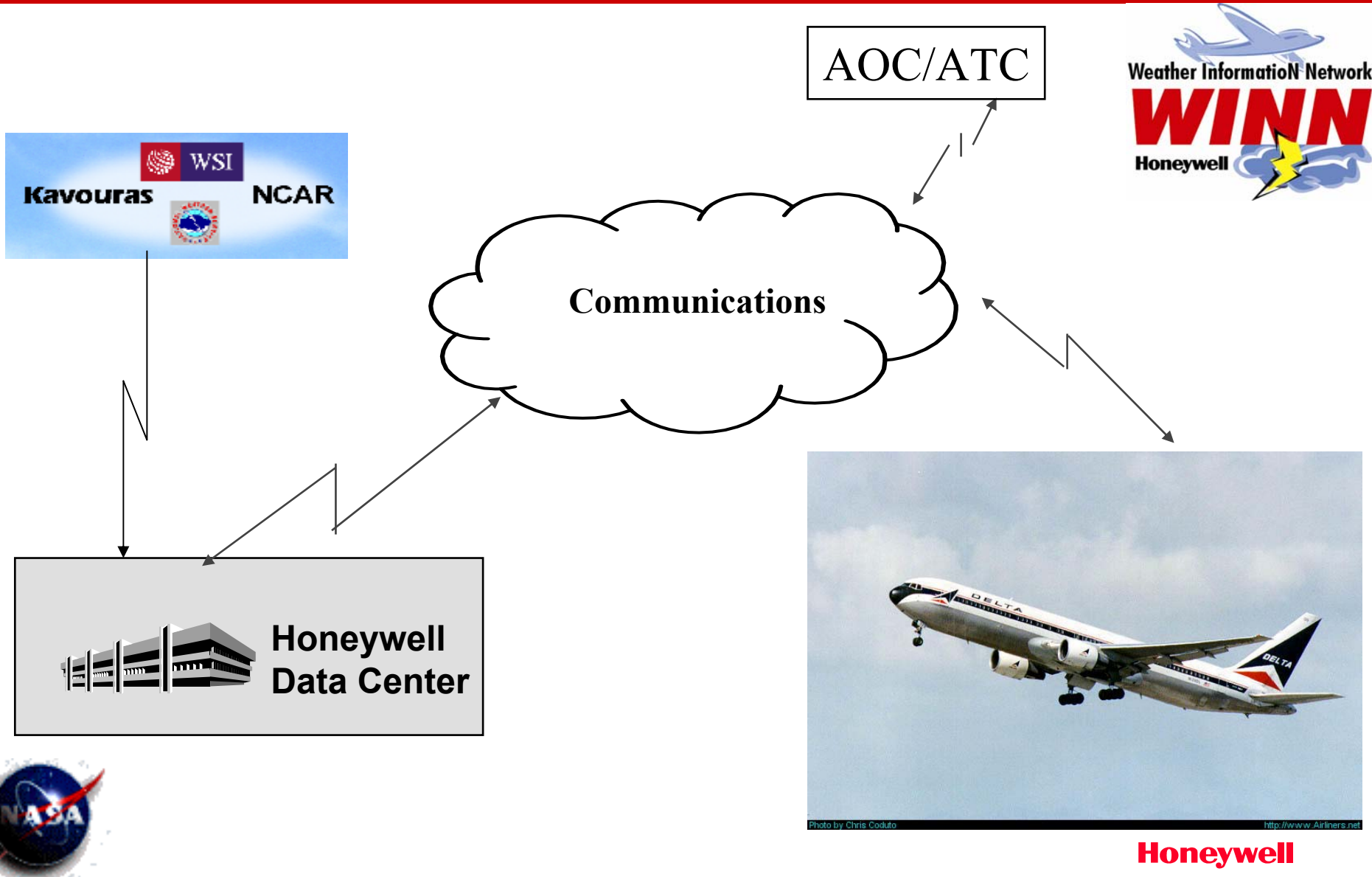


Data

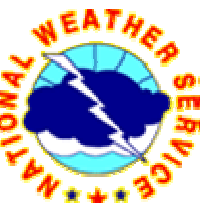
- **Turbulence Detection and Forecast**
- **Weather Radar (US only)**
- **Satellite**
- **Convective Detection and Forecast**
- **Icing Detection and Forecast**
- **METARs (icon and text)**
- **TAFs (text)**
- **SIGMETs**
- **High level Sig Wx Prog**
- **Surface Analysis**
- **Winds Aloft**



System Overview

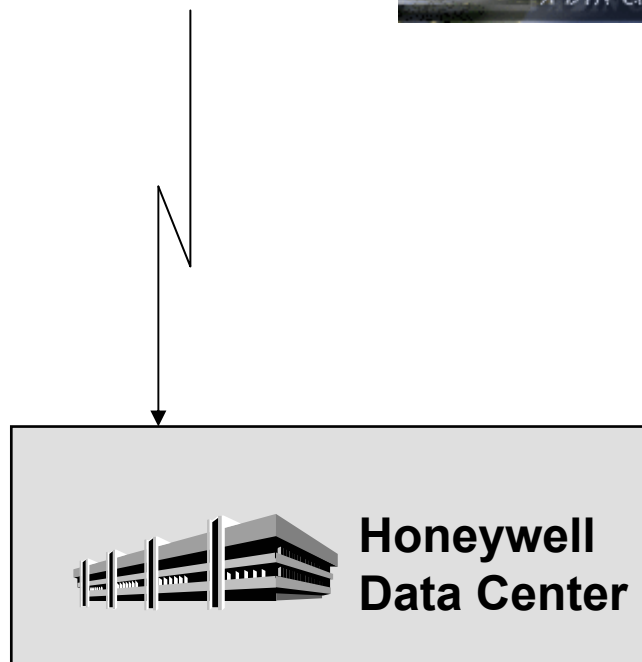


Ground processing



UCARweb

University Corporation for Atmospheric Research



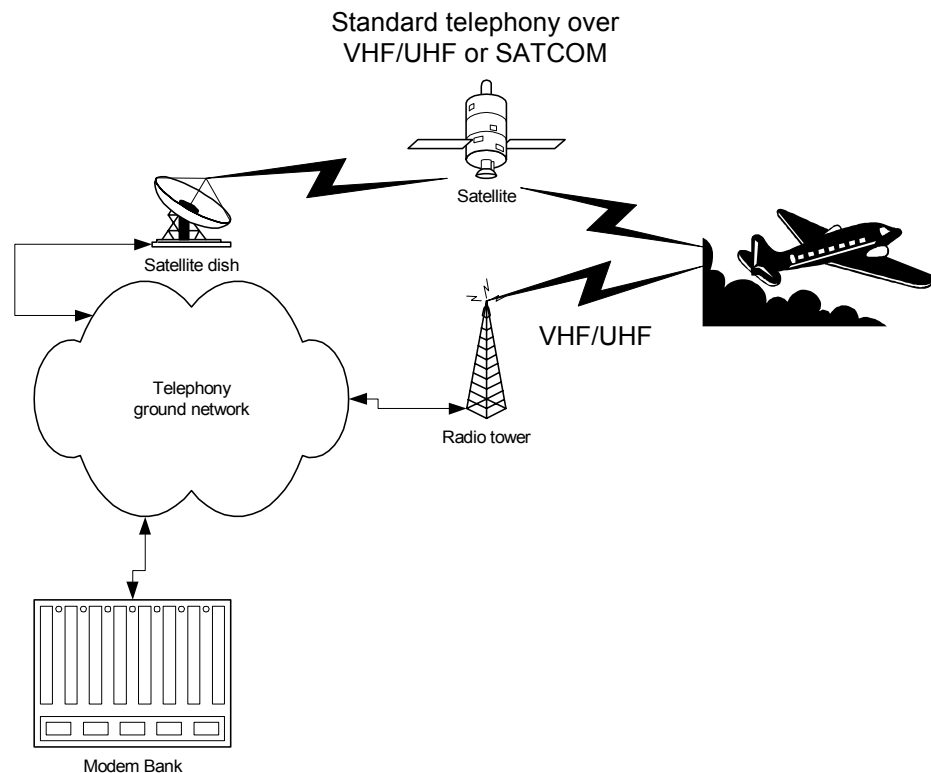
- Multiple weather providers push information to the Honeywell Data Center (HDC)
- The HDC receives, decompresses, reformats and recompresses the information
- Once reprocessed the HDC stores the information in a ready directory until called on for delivery



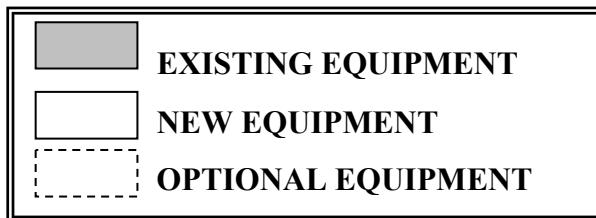
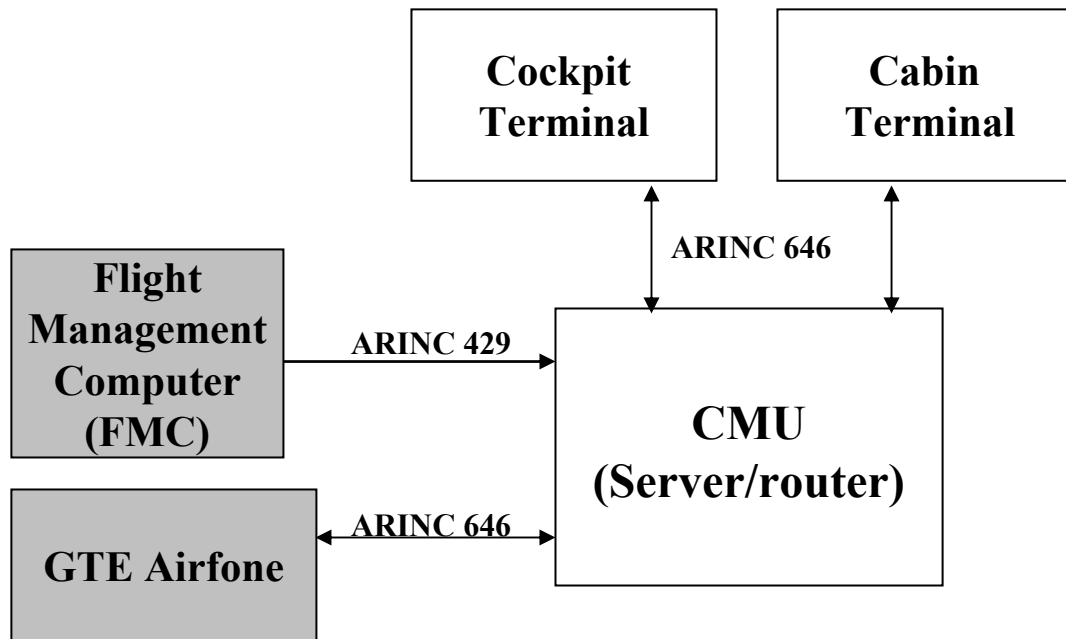
Communications



- Using standard airborne telephony (UHF or Satcom) the user establishes a link with the HDC
- Once established, the user requests an update of information, based on position
- The HDC replies by sending all information requested, through matching the user's request with the current master directory of all information
- This process is repeated on a periodic basis

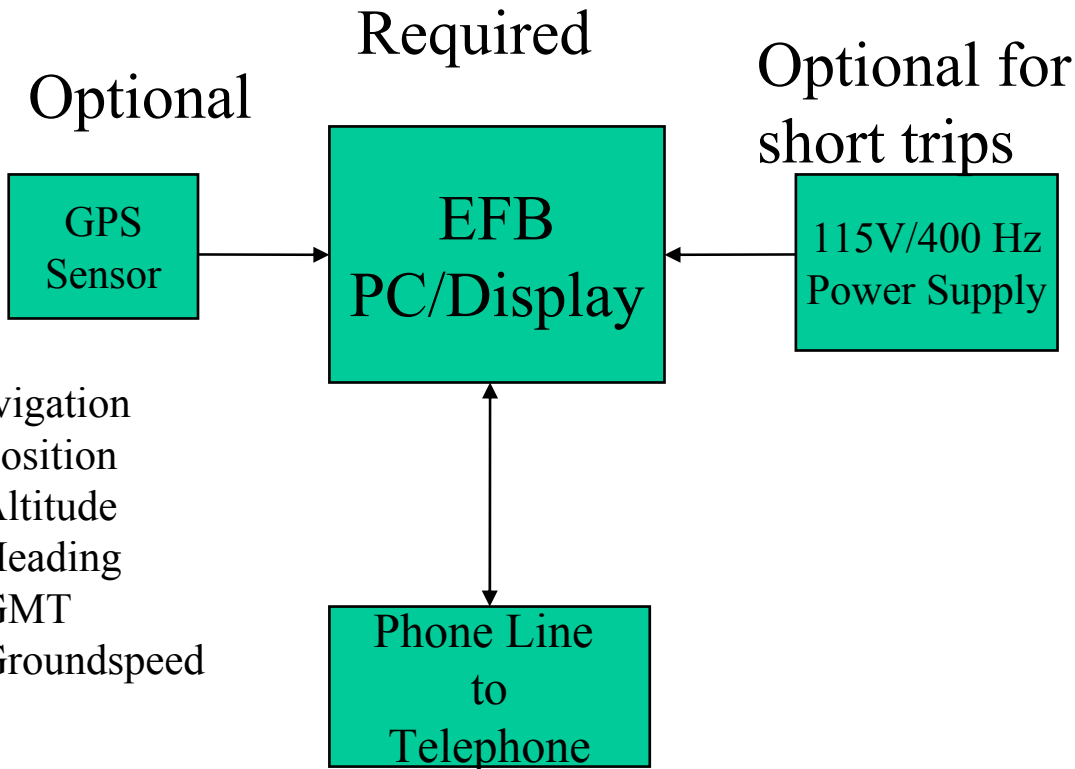


Airborne



Honeywell

Airborne 2



- Navigation
- Position
 - Altitude
 - Heading
 - GMT
 - Groundspeed

- Once information is received it resides on the PC until requested
- The unit will require power for durations greater than the battery life
- The unit may use navigational (GPS) information to facilitate moving map display



Airborne Displays

- **LRU**
 - Avionitek ICIS
 - Northstar CT-1000
 - Honeywell flat panel
- **Portable Electronic Device**
 - Fujitsu 3400
 - HP OMNI 4150
 - Toshiba Tecra
 - Qube
 - Fujitsu 2300
 - Northcoast



Honeywell



Current status

- Completed evaluation flights on UAL A-320 and Delta B-777
 - “CHANGED ALT. TO TEST THE CAT FUNCTION. APPEARED TO WORK WELL.”
 - “IMPLIMENT A S A P !!!!!!!!!!!”
 - “NEED TO BE ABLE TO INSERT WPT'S INTO MIDDLE OF FLT PLAN ROUTINE.”
- Additional, multiple evaluations now under contract and planned for the summer of 2001
- Officially a commercial offering
- Technical thrust
 - Further cost and function improvements
 - Overall robustness improvements



Our Airspace System

- **Current and projected growth in the air carrier and air cargo industry is 5.6% for the next 20 years**
 - Currently 11,000 jet aircraft worldwide
 - Projected 33,000 jet aircraft by 2019 (IATA, 1999/ Boeing 2000)
- **ATA projects a 250% increase in delays by 2007, caused by a 43% passenger increase and 2500 addl. A/C. (ATA, 1999)**
- **FAA projects that, in 2007, more than 800 million passengers will fly in the United States –three times the number who flew in 1980. (Gore, 1997)**
- **The ATS data link focus group suggests that “airline operations will be critically constrained by the year 2005 if nothing is done to curb delay growth.” (ATS Data Link Focus group, 1999)**



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